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ABSTRACT

Supporting earlier research evidence showing that participation in school activities is related to later positive cognitive, social, and personality development, the findings of this study suggest that the advantages for the well rounded development of the individual student in small schools--those graduating 150 or fewer students per year--may have been overlooked in the rush to put large numbers of students together in ever larger high schools. The study surveyed 1982 and 1983 yearbook lists of activities of almost 9,000 seniors from 24 central New York state public high schools with senior classes ranging from 21 to 622 students. Findings show that while larger schools offer more activities, smaller schools have higher rates of student participation for both sexes. Especially noteworthy are the much higher percentages of students from larger schools relative to students from small schools showing no participation whatever in any of the school's activities. Evidence indicates that the small schools with their relatively underpopulated settings encourage participation by many students; the students themselves can see they are needed for successful operation of the setting. (NEC)

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STUDENT VOLUNTARY PARTICIPATION AND HIGH SCHOOL SIZE

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STUDENT VOLUNTARY PARTICIPATION AND HIGH SCHOOL SIZE

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This study was designed to test with new and more adequate data the conclusion reached in previous research showing that as size of high school increases, there is a decrease in the number of voluntary, extracurricular activities in which the average student becomes involved. Several earlier studies have found that, on the average, students in large high schools take part in far fewer such activities than do students in small high schools. The question is important in view of empirical evidence showing that the experience of participating in such activities carries significant benefits for the development of personality and both cognitive and social competence. Extensive involvement in school activities probably serves to maintain students' interest in the school and to reduce the likelihood that they will drop out. The high drop-out rate often reported in large high schools may well be related to the less extensive involvement of their students in the voluntary, extracurricular activities of the school. Given the present keen and growing interest in strengthening education and especially secondary

education, it seems important to know more about what keeps high school students in school. Even the best academic programs can benefit only students who stay in school.

Small high schools everywhere are facing increasing pressures to consolidate with other schools to achieve the presumed economies of scale and to enrich curricular offerings. But the decision to move students from smaller to larger schools should be informed not only by short-run fiscal and curricular considerations. The psychological and developmental consequences for the students involved should also be taken into account.

This study was inspired by the research on behavior settings by ecological psychologists Barker, Wright, Gump, Willems, Wicker, Bechtel, the Schoggens and others. The benchmark study in this line of research is the now familiar comparison of Midwest, an American small town, and Yoredale, a similar village in North Yorkshire, England, in terms of their behavior settings in 1954-55. This comparison provided early data for the development of behavior setting theory upon which the present study is based.

Behavior settings are environmental units that include both aspects of the physical environment and patterns of behavior. They are stable parts of a town or institution within which standing patterns of behavior of people in general occur. A meeting of the 4-H Club occurs in a particular place at a specific time and features certain, highly predictable patterns of behavior--someone chairing the meeting, a secretary taking notes, discussion of agenda items by members present, reports from officers, etc. Similarly, a high school basketball game takes place in the gymnasium during a specified

period and the standing pattern of behavior includes playing, refereeing, scorekeeping, cheering, watching, etc., with great dependability. Similar statements can be made about any behavior setting--the drug store, an elementary school music class, marching band practice, a meeting of the high school varsity club. Full descriptions of methods for behavior setting definition, identification and description are available (Barker & Wright, 1955; Barker, 1968; Barker & Gump, 1964; Barker & Schoggen, 1973; Wicker, 1979).

A number of behavior setting surveys have been carried out and reported in the literature. Such a survey involves identifying and describing all the public behavior settings in a given town or institution such as a school or a church. A behavior setting survey utilizes direct observation by field workers of the operation of the settings, study of public documents such as membership rosters, public notices, newspaper reports, etc., and consultation with local informants. A behavior setting survey covers all of the public areas of the town or institution; it therefore includes all behavior in public places.

The first survey of the two small towns, Midwest and Yoredale, showed them, as expected, to be quite similar in many important respects: both were small, rural trading centers and seats of local government; neither was a suburb of a larger population center; many of the behavior settings of each town had similar counterparts in the other town. But one major difference stood out: Midwest, relative to Yoredale, was short-handed. The number of people

available to operate the behavior settings of the town was much smaller in Midwest. This difference is shown in Table 1 of the handout.

TABLE 1

	Midwest	Yoredale
Number of persons	715	1300
Number of behavior settings	576	504

Yoredale, with almost double the total population, operated fewer behavior settings than Midwest. Thus relative to Yoredale, Midwest had fewer persons to operate more behavior settings.

These and other data suggest that the behavior settings of Midwest were underpopulated. There were more jobs to be done, more slots to be filled, and fewer persons to do the work—to be presidents, chairpersons, secretaries, team members, actors, clerks, and managers—in Midwest relative to Yoredale. This difference implies that, on the average, Midwest residents should enter more of the town's behavior settings. The data confirm this expectation; the average child in Midwest, for example, entered one and one-half times as many different behavior settings during the survey year as did the average child in Yoredale; 360 in Midwest to 240 in Yoredale. The relative underpopulation of Midwest settings also implies that the average Midwesterner should occupy positions of leadership in the operation of the town's settings more often than a comparable resident of Yoredale. Again the data strongly support the expectation; the average Midwest resident served in a leadership position in three times as many different behavior settings as

the average resident of Yoredale, and this was true for children and adolescents as well.

Behavior setting surveys were completed for the same two towns in 1963-64, again comparing the towns and making possible the charting of changes over the decade between the two surveys (Barker & Schoggen, 1973). The major differences between the towns appeared again in the later study: Midwest, relative to Yoredale, was shorthanded.

Data from these and other behavior setting surveys of towns and institutions such as schools and churches, led Roger Barker to develop behavior setting theory in an effort to account for the apparent relation between size of a town or an institution and the amount of participation in its behavior settings by the average resident or member (Barker, 1960). Behavior setting theory holds that, as the population of a town or institution increases, the number of behavior settings increases also, but much more slowly. As size of unit increases, the number of persons available to operate the behavior settings increases at a faster rate than the number of jobs needing to be done in the settings: the larger the unit, the greater the personnel surplus. This implies that the behavior settings of larger towns, schools, churches, and other institutions exert low pressure on their citizens, pupils, residents, and members to enter and take an active part in the operation of the settings. People become redundant; the individual person is not essential to the operation of the settings; there are lots of others available to do the jobs.

Conversely, in smaller towns, schools, churches and other institutions,

where there is a shortage of people relative to the number of positions to be filled, the behavior settings generate greater pressure on the available people to enter and take part in the operation of the settings. Where people are in short supply, where substitutes and alternates are less readily available, each person is more important to the successful operation of the behavior settings. The absence of any one member is more likely to have serious impact on the smooth functioning of the setting.

Behavior setting theory has been tested in a number of investigations both in the field and in the laboratory with results that are generally quite consistent with the expectations based on the theory. Most of the field studies have examined participation of pupils and members in the behavior settings of schools and churches in a wide range of sizes. An impressive series of studies of student experience in high schools of different size is reported in the book, Big School, Small School, by Barker & Gump (1964) and their colleagues. These investigators looked at high schools in eastern Kansas, the different studies involving different numbers of these schools for different purposes ranging from 5 schools in the most intensive studies to 218 schools in others that relied mainly on archival data.

They found that, consistent with behavior setting theory, the number of students increased at a rate eight times as fast as the number of behavior settings in schools ranging in size from 35 to over 2,000 students, that is, the largest schools had 65 times as many students as the smallest school but only 8 times as many behavior settings (Barker & Barker, 1964, p. 49). Other, more direct measures showed that, as expected, extracurricular

behavior settings in the larger schools had three times the number of student members as the comparable settings in the small schools (Barker & Barker, 1964, p. 50; Gump & Friesen, 1964, pp. 82-83). Thus, relative to large school settings, the settings of the small schools were underpopulated; the average small school setting had only one-third as many students as the average setting in the large school to carry out the essential tasks in the operation of the settings.

From such differences, behavior setting theory would predict that participation in the voluntary, extracurricular activities of the school would be much greater on the average for students in small than in large schools. Several measures yielded data consistent with this expectation. Using the list of activities given in the school yearbook after the name of each graduating senior, essentially a self-report measure, Barker & Hall (1964) found that small school seniors reported taking part in more than twice as many extracurricular activities as seniors in large schools (p. 71). Gump & Friesen (1964), using a specially designed self-report form, found little difference in the average amount of participation in such activities by students in small and large schools (p. 83) but the variance was much greater in the large schools, making the similarity of the means rather misleading. Moreover, their data show that small school students held responsible positions in their settings with more than twice the frequency of the large school students (p. 85). These findings are in general agreement with the results of an early study (Larsen, 1949) which found that students in large high schools reported taking part in either no activities or only one while in high school more often than students in small schools. The

large school students also reported difficulty in getting into activities.

Similar results were obtained when Baird (1969) studied a large (21,371) national sample of student responses on the American College Testing Program assessment. Students from small high schools reported participating to a greater extent in a variety of extracurricular activities than did students from large high schools. Kleinert (1969) reported negative correlations between participation in voluntary school activities, e.g., music, athletics, publications, clubs, etc., and high school size in 63 schools in southern Michigan ranging in size from 87 to over 3,000 students in the upper three grades. In a more recent study by Grabe (1981), almost 1,600 students attending five large (more than 580 in upper three grades) and 15 small (all others) schools completed questionnaires. Again, students in smaller schools reported participating in more voluntary activities than did students in the large schools. Morgan & Alwin (1980) obtained questionnaire responses from more than 9,000 juniors and seniors in 55 public high schools in the state of Washington concerning their participation in seven types of voluntary school activities. These schools ranged in size from 17 to 1,205 enrolled juniors and seniors in 1964-65. These investigators also found more participation and in a wider variety of activities by small school than by large school respondents.

These and other studies provide strong evidence that school size is negatively related to amount of participation in the voluntary, extracurricular activities of the school: the larger the school, the lower the level of student participation and the fewer the experiences of students

in leadership or other responsible performances in such activities.

But still there are strong loyalties to big high schools, inspired in part by the influential report of James B. Conant (1959), whose recommendations for the improvement of secondary education gave top prioity to the elimination of all high schools graduating less than 100 students. His concern appears to have been limited, however, to the quality of the academic curriculum. More recently, Rutter, Maughan, Mortimer, Ouston, with Smith (1979), in their important study of 12 secondary schools in inner-city London, England, found that school size was not related to their outcome measures: attendance, staying in school, examination success, and delinquency rates. However, the range of school sizes included in this study may be so restricted that the findings have little relevance to the size question--all the schools in this study appear to have been relatively large. And small high schools continue under mounting pressure to consolidate. As enrollments dwindle and costs rise, the small high school is becoming an endangered species despite the dedicated efforts of local citizen groups to keep their small high schools. In some places, New York state for example, a statewide organization of small school districts has been formed in a concerted effort to avoid destruction. A recent article about this group and its concerns carried the title, "Rural schools fight back" (Staff, 1982).

So it is an important and timely question. Certainly the larger high school can offer more courses and especially more advanced work that appeals primarily to a relatively small number of more able students, often those who are college bound. But the alleged general educational benefits of the

larger high school have more often been assumed than demonstrated in empirical research (Coleman, et al, 1966; Halsall, 1973). Even the presumed economies of scale that are supposed to make large schools more efficient or cost-effective are difficult to document (Riew, 1966), especially if one takes a broad view of costs. The long-range consequences for individual development of lack of active, personal involvement in important activities, of feeling not needed and not wanted during one's high school years, have rarely been considered in the cost/benefit ratio. Yet there is evidence that involvement in high school voluntary extracurricular activities has significant consequences for personal, social, and cognitive development.

Spady (1970), in a longitudinal study of 297 boys as seniors and again four years later, holding constant family SES, I.Q., and grades, found that those with high levels of participation in high school service and leadership (but not sports) activities had a higher survival rate in college. Otto's (1975) findings confirm Spady's; involvement in high school activities including sports "plays a significant role in the educational attainment process [for males], independent of the influence of background socioeconomic statuses, academic ability, and academic performance" (p. 171). His study covered a longer period of time, 15 years. He also reports (Otto, 1976) that involvement in high school activities was a strong predictor of involvement in adult voluntary activities, e.g., civic groups, church and lodge groups, sports teams, charity and welfare organizations. Hanks & Eckland (1976), also using a longitudinal design over a span of 15 years with a large national sample, report that involvement in high school and college activities other than sports had "relatively strong direct and total salutary

effects on academic performance and achievement in both [high] school and college for both sexes" (p. 271). Halsall's review of the research relating to size of school led her to conclude that small schools provide a more favorable environment for personal development of students. "The pressures which small schools are shown to exert more successfully than the large ones help to contribute to a sense of competence, since whether weak, strong, inept, skilful, young or experienced, each pupil really is important. Many activities cannot continue without his participation, and the increased sense of responsibility which this situation generates is likely to produce greater and earlier maturity, as well as greater capacity for leadership" (p. 95). Barthell & Holmes (1968) found that high school graduates who were later diagnosed as schizophrenic had, while in high school, participated in significantly fewer social activities, e.g., student council, language or other special interest clubs, school paper staff, than normal control subjects. A nonreactive measure of participation was used, i.e., counting the activities listed in the index or senior summary of each subject's high school senior yearbook.

There is substantial agreement in the findings of these and all other studies that we have seen: small schools with underpopulated settings encourage participation by students in school activities and this participation is associated with subsequent educational attainment and personal development. But all of these studies relied entirely upon self-report in measuring the amount of participation in high school activities, a method that may not reflect actual participation equally well in small and large high schools. In small schools, where students and their

activities tend to be well known to everyone, self reports on participation in school activities are likely to be fairly accurate for all students. In large schools, however, where students and their activities tend to be known by only a few fellow students and faculty members, self reports may tend to be inaccurate in either of two ways: college bound students may be motivated to claim every possible activity on their self-reports because it will look good on their college application blanks while other students may fail to report all of their activities out of indifference. Hanks & Eckland (1976; p. 278), for example, state that their data on participation "were obtained retrospectivly and therefore are subject to the usual limitations of recall data." Even the roster of senior activities sometimes published in the yearbook is not currently a dependable measure of participation, especially in large schools. Such rosters simply are not published in yearbooks of many schools these days. And even when they are, the lists may not be accurate. One yearbook faculty advisor informed us that the list of activities given after each senior's name in her large school reflected only what the individual student volunteered and that the total absence of listed activities after a student's name often meant only that the student had not bothered to submit a list! Nor was any effort made to verify lists that were submitted.

In the present study, we have obtained new data without relying upon self report. This study also includes a large number of students, almost 9,000 seniors, looks at schools in a wide size range, and adds schools located in the northeastern part of the country to the earlier work on schools mainly in the midwest and the far west.

Twenty-four schools mostly in the central New York state region were selected from a roster of all New York State public high schools. These schools were chosen to represent the complete range of high school sizes from the smallest to the largest outside major metropolitan centers such as Syracuse and Rochester and located within driving distance of Ithaca.

Guided initially by the overall size of the student body in each high school as reported in the roster, we soon discovered that, due to wide variations in school structure (central schools, high schools with 3, 4, 5, and even 6 year levels), it was preferable to use number of students in the senior class as a better measure of high school size. The 24 schools included in the study range from 21 to 622 students in the senior class, equivalent roughly to three-year high school enrollments of 60 to 1,800 students. They are spread fairly evenly across the full range of sizes.

Study of yearbooks from a number of schools and discussion of the problem of how to measure student participation with school personnel--directors of activities, principals, teachers, and students--convinced us that the lists of members given under or near the photographs of student activity groups in the yearbooks are more dependable than any other source of information on student participation in school activities. Thus we decided to use the number of activities for each senior student as given in such official listings of members under the photographs. Only activities that required on the part of the senior a voluntary decision to participate were included, e.g., sports, drama, band, language club, camera club. Courses taken for academic credit, even if voluntarily selected, were not counted. Often the

listing under a group photograph would include names of students who took part in the activity but who were not available to be in the photograph. Several yearbooks included lists of what they designated as "shutter-shy" members of the organization or activity.

Variations from year to year in the editorial staffs of a school's yearbooks and other factors produce some variability in the amount of information included in the yearbook in different years. To limit the impact of such variability--to obtain a more stable assessment of student participation in each school--the study included yearbooks from two different years, 1982 and 1983, for each high school. Thus what we obtained was, for each senior student in each of the two years, a count of how many of the school's activities publicly acknowledged that student's participation during the year covered by the yearbook. Data from the two years were averaged in each case.

The main findings of this study are summarized in Table 2 of the handout. Here the 24 schools are shown in order of increasing size of senior class, from 21 to 622 students. The next column shows the mean number per student per year of activities in which students took part in the different schools. The expected negative correlation with school size is readily apparent; the data yield a Kendall's Tau rank order coefficient of -.655, significant beyond tabled values.

The other three columns show the percents of all seniors who participated in different numbers of activities per year: the column headed "% 0" gives the percents of students who were not shown as participating in any of the

TABLE 2
PARTICIPATION BY ALL SENIORS

School	# Srs.	Mn. # Parts.	% 0	% 3-5	% 6+
1.	21	3.17	17	29	22
2.	28	3.38	4	38	20
3.	28	1.60	31	25	0
4.	34	1.63	39	27	3
5.	45	1.91	28	22	8
6.	66	1.93	32	27	5
7.	68	1.79	38	25	5
8.	83	1.44	39	19	2
9.	98	1.21	51	22	1
10.	102	1.79	35	24	7
11.	108	1.49	39	19	4
12.	109	1.84	33	22	7
13.	110	1.54	41	23	2
14.	130	1.23	43	14	2
15.	149	1.62	38	21	5
16.	223	1.19	49	13	3
17.	227	1.23	48	15	3
18.	259	1.53	44	19	6
19.	320	1.25	57	13	6
20.	349	.82	54	10	0
21.	419	1.15	46	15	1
22.	429	.78	63	10	1
23.	429	.67	63	8	1
24.	622	.82	60	20	2

school activities at all; % 3-5 means the students were listed as participants in 3 to 5 different school activities; 6+ means taking part in six or more school activities. All three of these columns produce strong correlations in the expected directions: the percent of seniors with no activities is positively related to school size (Tau = +.717, p. beyond tabled values); the other two columns yield negative correlations, as expected (3-5 Tau = -.697, p. beyond tabled values; 6+ activities, Tau = -.344, p. =.014).

Similar correlations were run for males and females separately. Again all the Tau values were large and highly significant, only somewhat more so for females.

These data provide impressive support for the conclusion reported in earlier studies. Students in smaller high schools on the average participate in the extracurricular activities of their schools at a much higher rate than do their counter-parts in larger high schools. Especially noteworthy and robust are the much higher percents of students in the larger schools relative to the smaller schools showing no participation whatever in any of the school's activities.

These findings are the more interesting in view of the fact that the larger schools did offer a much richer set of activities for the students than did the smaller schools. One measure of this is the total number of activities pictured in the yearbook. Here the values ranged from 15 for one of the smallest schools to 67 in a large school; the large school had about four times as many activities pictured in the yearbook as the small school but it

had 15 times as many students. The Tau correlation between size of school and number of activities pictured in the yearbook was +.734, significant beyond tabled values. Here is further evidence of what Barker & Gump (1964) called the school size illusion. The large school offers a richer environment for its students but the evidence suggests that the average student does not benefit from these opportunities. Although the small school does not provide such a wealth of activities, the average student has a richer experience as measured by the amount of active involvement in the activities that are available.

Although our resources in the present investigation did not permit us to carry out the more thorough analysis of the actual behavior settings of these schools, the findings are fully consistent with the expectations based upon behavior setting theory. The small schools with their relatively underpopulated settings encourage participation by many students; the students themselves can see that they are needed for the continued successful operation of the settings. With only 30 students in the class, nearly every student must take a part or help out in some other way if the class play is to be staged. By contrast, in the large school, there may be a few more slots to be filled in putting on the class play, but most of the 300 class members will never be more than spectators, if that.

In view of the research evidence cited earlier showing that participation in school activities is related to later cognitive, social, and personality development, the findings of the present study, supporting those of earlier studies, suggest that the advantages for the well rounded development of the

individual student in small schools--those graduating 150 or fewer students per year--may have been overlooked in the rush to put large numbers of students together in ever larger high schools.

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